REMARKS/ARGUMENTS

Status of Claims

Claims 1 to 32 are currently pending in the application.

Claim Amendments

The preamble of claim 1 has been amended to recite "A method for co-modelling a simulated packet network and a simulated optical network over which the simulated packet network operates, the simulated packet network representing a plurality of packet links between packet network nodes and the simulated optical network representing a plurality of optical links between optical network nodes". The two "generating" limitations have been amended to recite "generating a basic packet capacity comprising a capacity value for each packet link based on packet network topology information and packet traffic information" and "generating a basic optical capacity comprising a capacity value for each optical link based on optical network topology information and the basic packet capacity". These amendments have been made for the sake of clarity and to emphasize the intended operation of the invention. The preamble of independent claims 8, 17 and 25 have been similarly amended.

Claim 2 has been amended to recite "assigning each packet link of the simulated packet network a flow" and "assigning each optical link of the simulated packet network a flow" for consistency with amended claim 1.

Claims 5 to 7, 12 to 15, 21 to 23 and 28 to 31 have been amended by numbering the clauses to make the claims more legible.

Claim 10 has been amended to delete a redundant use of the term "network".

The preamble of claim 14 has been amended to recite "A method for analyzing survivability of a simulated packet network and a simulated optical network over which the simulated packet network operates, the simulated packet network representing a plurality of

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packet links between packet network nodes and the simulated optical network representing a plurality of optical links between optical network nodes, wherein an optical failure is known to occur within the simulated optical network and wherein packet link protection is performed in the simulated packet network". Independent claims 15, 30 and 31 have been similarly amended

Claim 17 has been amended by replacing the expression "computer useable medium" with "computer readable medium" and replacing the expressions "computer readable program code" and "code means" with "computer executable instructions". Amended claim 17 further includes the limitation that the computer executable instructions are stored on the computer readable medium for execution by a computer processor. Claims 18 to 32 have been similarly amended, where appropriate.

Other minor amendments have been made for grammatical correctness, i.e. changing semi-colons to colons.

35 U.S.C. § 112 Rejections

Claims 17 to 32 have been rejected under 35 U.S.C. § 112 as failing to comply with the enablement requirement. The claims have been amended as described above and on that basis Applicant submits that the claims comply with 35 U.S.C. § 112. Applicant respectfully requests the Examiner to reconsider and withdraw the rejection.

35 U.S.C. § 103(a) Rejections

Law

The United States Supreme Court visited the manner by which "obviousness" under 35 U.S.C. §103 is to be interpreted in the case of *KSR Int'l v. Teleflex, Inc., No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007)*. As the Court noted in KSR, once the scope of the prior art is ascertained, the content of the prior art must be properly combined. An obviousness inquiry requires review of a number of factors, including the background knowledge possessed by a person having ordinary skill in the art, to determine whether there was an apparent reason to combine the elements of the prior art in the fashion claimed by the present invention. For the Patent Office to properly combine references in support of an obviousness rejection, the Patent

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Office must identify a reason why a person of ordinary skill in the art would have sought to combine the respective teachings of the applied references. Id. at 15. Even if the Patent Office is able to articulate and support a suggestion to combine the references, it is impermissible to pick and choose elements from the prior art while using the application as a template. *In re Fine,* 837 F.3d 1071 (Fed. Cir. 1988). It is respectfully submitted that the 35 U.S.C. §103(a) rejection is deficient for its failure to comply with the U.S. Supreme Court's requirements recently articulated in *KSR.*

Prima Facie Obviousness Threshold

MPEP 2142 explains the procedural tool of the *prima facie* obviousness threshold, i.e. the applicant does not bear the burden of addressing substantive issues of obviousness (such as secondary considerations) until the examiner makes the prima facie case. A *prima facie* case requires (1) that all elements be taught in the cited reference or references when combined; (2) reasonable expectation of success; and (3) motivation to combine the cited references. 1 and 2 remain irrespective of KSR. The May 3, 2007 memo from Margaret Focarino dealing with the KSR decision states that (3) remains a requirement. More specifically, KSR requires that there be a reason why a person of ordinary skill in the art would have combined the references, and the Focarino memo requires the Examiner to provide such a reason during prosecution.

Claims 1 to 4, 8, 9, 11, 17 to 20, 24, 25 and 27

The Examiner has rejected claims 1 to 4, 8, 9, 11, 17 to 20, 24, 25 and 27 under 35 U.S.C. 103(a) as being unpatentable over Iovanna et al. (U.S. Patent Application Publication 2006/02097856).

Argument

With regard to claim 1, the Examiner asserts that Iovanna et al. discloses "a method for co-modelling a packet network operating over an optical network, the method comprising generating a cost parameter based on a simulated packet network comprising packet network topology information and packet traffic information; and generating a basic optical capacity based on a simulated packet transport network comprising optical network topology information

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and the basic packet capacity".

The Examiner has equated the limitation of "generating a basic packet capacity", which is what is actually recited in claim 1, with "generating a cost parameter". The Examiner states that Iovanna et al. does not specifically disclose that the cost parameter comprises a basic packet capacity, but alleges it would have been obvious to employ a cost parameter that comprises a basic packet capacity. Amended claim 1 recites "a basic packet capacity comprising a capacity value for each optical link". Applicant submits that a "cost parameter", as disclosed in Iovanna et al., is "a first critical constraint or required resource" considered when assigning a weight function indicating the cost of using a link for the transport of a data packet in an actual network. Based on the assigned weight functions for each path, an optimized path is determined for a source destination node pair in the actual network. Iovanna et al. does not perform generating a cost parameter comprising a capacity value for each packet link based on packet network topology information and packet traffic information, but instead utilizes a cost parameter to aid in determining an optimal path through the network.

The Examiner equates the basic optical capacity with "the availability of bandwidth at the wavelength level" disclosed in paragraph [0071]. Amended claim 1 recites "a basic optical capacity comprising a capacity value for each optical link". Iovanna et al. does not perform generating a basic optical capacity comprising a capacity value for each optical link based on optical network topology information and the basic packet capacity, but instead utilizes information related to a known available optical capacity for possible physical links to aid in determining an optimal path through the network.

Claim 1 can be said to be essentially directed to generating a capacity for each of the respective links of the simulated packet network and the simulated optical network of the co-modelled simulated packet network. This enables design and/or analysis of networks based on desired/expected packet network topology information, packet traffic information, and optical network topology information.

Iovanna et al. does not disclose generating either "generating a basic packet capacity comprising a capacity value for each packet link based on packet network topology information

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and packet traffic information" and "generating a basic optical capacity comprising a capacity value for each optical link based on optical network topology information and the basic packet capacity" as, with respect, Iovanna et al. is not directed to co-modelling a _simulated_ packet network and a _simulated_ optical network. Instead, Iovanna et al. is directed to strategies for dynamically routing data packets for a respective source-destination node pair of a plurality of node pairs in _an actual network_. The disclosure of Iovanna et al. is intended to be used in an actual network topology for routing data packets by using parameters that define predetermined critical network constraints, for example, the sum of _all available bandwidth_ of the physical links or _the actual bandwidth available_ over single physical links (paragraph [0031]). On the other hand, the subject matter of the claims of the present application is directed to use with _simulated packet network and the simulated optical network over which the simulated packet network operates_. As such, the subject matter of the present application can be used for planning and designing packet networks to define and analyze the capacities that can/should be used over respective links of a network _that is being simulated_. Applicant submits that the use of the expressions "co-modelling", "simulated packet network", "simulated optical network" clearly indicate that the subject matter of the present claims is directed to generating values, i.e. a basic packet capacity and a basic optical capacity, for _a representation of a network_, not for use in dynamic path routing of data packets in _actual operation of a network_.

For at least the above reasons, Applicant submits that Iovanna et al. does not disclose all the limitations of claim 1. As such, the Examiner has failed to satisfy the requirement that all limitations must be disclosed by the cited reference, as is necessary to establish a _prima facie_ case of obviousness.

Claim 8 recites similar subject matter to claim 1, along with an additional limitation of performing analysis on the simulated packet network and the simulated optical network over which the simulated packet network operates. For the same reasons as discussed above regarding claim 1, Applicant submits that Iovanna et al. is not directed to the same subject matter as the present application, and does not disclose performing method steps that are at all related to what is recited in claim 8.

With regard to the additional limitation, the Examiner alleges that Iovanna discloses

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"performing analysis on the simulated packet network and the simulated optical network over which the simulated packet network operates" in the form of block 565 of Figure 5 and the results illustrated in Figures 6-9. Block 565 of Figure 5 is a step in a method of determining an optimal path between two nodes of a network. Paragraph [0080] of Iovanna et al. discloses "If more that one link is available, a criterion is applied at step 565 to select the most appropriate physical link, as will be better detailed hereafter, otherwise the only available one is picked". Applicant submits that the step of block 565 is totally unrelated to performing analysis on a simulated network, it is merely directed to a manner of selecting an appropriate physical link for routing a data packet in an actual network. Applicant submits what is illustrated in Figures 6-9, is not "performing analysis on the simulated packet network and the simulated optical network over which the simulated packet network operates" as recited in claim 8. The results illustrated in Figures 6-9 are comparisons of performance using different criteria in the choice of physical links [0044]. The figures compare results achieved by a method of the proposed invention of Iovanna et al. to other known ways to perform a similar activity.

For at least the reasons discussed above, Applicant submits that Iovanna et al. does not disclose all the limitations of claim 8. As such, the Examiner has failed to satisfy the requirement that all limitations must be disclosed by the cited reference, as is necessary to establish a *prima facie* case of obviousness.

Claims 2 to 4 are dependent upon claim 1. Claims 9 and 11 are dependent upon claim 8. Applicant does not concede that the additional features recited in these dependent claims are found in Iovanna et al. as set out by the Examiner. However, it is respectfully submitted that it is not necessary to address these issues at this time in view of the strong case for patentability of independent claims 1 or 8. Claims 17 to 20, 24, 25 and 27 recite similar subject matter to claims 1-4, 8, 9 and 11 in the form of computer readable medium claims, and are likewise submitted to patentably distinguish over Iovanna et al..

On these basis the Examiner is respectfully requested to withdraw the rejection of 1 to 4, 8, 9, 11, 17 to 20, 24, 25 and 27 under 35 U.S.C. 103(a).

Claims 5 to 7, 10, 12 to 16, 21 to 23, 26 and 28 to 32

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The Examiner has rejected claims 5 to 7, 10, 12 to 16, 21 to 23, 26 and 28 to 32 under 35 U.S.C. 103(a) as being unpatentable over Iovanna et al. and one or more of Applicant's admitted prior art, Doverspike et al. (U.S. Patent Application Publication 2004/0107382) and non-patent reference Ghani et al. (On IP-over WDM Integration).

It is respectfully submitted that the Examiner has failed to satisfy the requirements for a finding of obviousness recently articulated by the U.S. Supreme Court in its decision in *KSR Int'l v. Teleflex, Inc.*, No. 04-1350, slip op. at 14 (U.S., Apr. 30, 2007). Accordingly, as a matter of law, the rejection of the claims cannot stand and must be rescinded.

Independent claims 14 and 15 are directed to methods for analyzing survivability of a simulated packet transport network. As described on page 3, lines 22-25 of the present application, "A survivability analysis on the network allows a user to simulate a failure of any single optical link in the simulated packet transport network and examine how this affects the traffic carrying requirements of the network" (emphasis added). Iovanna et al. is not directed to analyzing survivability of a simulated packet network, as alleged by the Examiner. Iovanna et al. is unrelated to what is disclosed in the present invention and recited in claim 14 and 15. Applicant submits that Iovanna et al. does not disclose all the limitations of claims 14 and 15 that are alleged by the Examiner to be disclosed by Iovanna et al..

Applicant submits that none of the cited references teach the limitations lacking in Iovanna et al. that are alleged by the Examiner to be disclosed by Iovanna et al.. Therefore Applicant submits that not all of the limitations are disclosed by the combination of cited references. As such, the Examiner has failed to satisfy the requirement that all limitations must be disclosed by the cited reference, as is necessary to establish a *prima facie* case of obviousness.

Claim 16 is dependent upon claim 14. Claims 30 to 32 recite similar subject matter to claims 14 to 16. Applicant submits claims 14 to 16 and 30 to 32 patentably distinguish over Iovanna et al. and the other cited references.

Claims 5 to 7 are dependent upon claim 1. Claims 10, 12 and 13 are dependent upon claim 8. Claims 21 to 23, 26, 28 and 29 are computer readable medium claims that are similar in subject matter to claims 5 to 7, 10, 12 and 13. Applicant submits that the combination of

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Iovanna et al. and the cited references do not disclose all the limitations of claims 1 and 8 alleged to be disclosed by the Examiner. Accordingly, a prima face case of obviousness has failed to be established with respect to claims 5 to 7, 10, 12, 13, 21 to 23, 26, 28 and 29.

Furthermore, in view of the subject matter disclosed in Iovanna et al. being unrelated to what is disclosed and claimed in the present application, Applicant submits that one skilled in the art would not consider Iovanna et al. when contemplating the subject matter of the present application. Therefore, Applicant does not concede that the Examiner has met the burden of identifying a reason why a person of ordinary skill in the art would have sought to combine the respective teachings of the Iovanna et al. and one or more of the cited references, as required by KSR.

On these basis the Examiner is respectfully requested to withdraw the rejection of 5 to 7, 10, 12 to 16, 21 to 23, 26 and 28 to 32 under 35 U.S.C. 103(a).

In view of the foregoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

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